Claims

[c1] 1.An electrical system for an automotive vehicle comprising:

a first power source having a first positive terminal and a first negative terminal;

a second power source having a second positive terminal and a second negative terminal;

a common electrical node coupled to said first negative terminal and said second positive terminal;

a first load coupled between said first positive terminal and said common node; and

a second load coupled between said common node and said second negative terminal.

[c2] 2.An electrical system for an automotive vehicle as recited in claim 1 further comprising an inverter coupled to said first positive terminal and said second negative terminal.

[c3] 3.An electrical system for an automotive vehicle as recited in claim 2 further comprising an integrated motor generator coupled to said inverter.

[c4] 4.An electrical system for an automotive vehicle as recited in claim 1 further comprising an inverter coupled to a series combination of said first power source and said second power source.

[c5] 5.An electrical system for an automotive vehicle as recited in claim 1 wherein said common node comprises a chassis ground.

[c6] 6.An electrical system for an automotive vehicle as recited in claim 1 wherein said first power source comprises a 42 volt source.

[c7] 7.An electrical system for an automotive vehicle as recited in claim 1 wherein said second power source comprises a 42 volt source.

[c8] 8.An electrical system for an automotive vehicle as recited in claim 1 wherein said first power source has a first voltage rating and said second power source has a second voltage rating equal to said first voltage rating.

[c9] 9.An electrical system for an automotive vehicle as recited in claim 1 further comprising a switch and a controller, said switch electrically coupling said first power source and said second power source in parallel.

[c10] 10.An automotive vehicle comprising:
a first power source having a first positive terminal and a first negative terminal;
a second power source having a second positive terminal and a second negative terminal;
a chassis ground coupled to said first negative terminal and said second positive terminal;
a first load coupled between said first positive terminal and said chassis ground;
a second load coupled between said chassis ground and said second negative terminal;
an inverter coupled to said first positive terminal and said second negative terminal; and
an integrated motor generator coupled to said inverter.

[c11] 11.An automotive vehicle as recited in claim 10 wherein said first power source comprises a 42 volt source.

[c12] 12.An automotive vehicle as recited in claim 10 wherein said second power source comprises a 42 volt source.

[c13] 13.An automotive vehicle as recited in claim 10 wherein said first power source has a first voltage rating and said second power source has a second voltage rating equal to said first voltage rating.

[c14] 14.An automotive vehicle as recited in claim 10 further comprising a switch circuit and a controller, said switch circuit electrically coupling said first power source and said second power source in parallel.

[c15] 15.A method of operating an electrical system for an automotive vehicle comprising:
operating a first load with a first power source;
operating a second load with a second power source;
forming a series combination of said first power source and said second power

source; and

operating an inverter with said series combination.

[c16] 16.A method as recited in claim 15 further comprising forming a common node between said first power source, said second power source, said first load and said second load.

[c17] 17.A method as recited in claim 15 further comprising switching said series combination to a parallel combination in response to a sensed condition.

[c18] 18.A method as recited in claim 17 wherein said sensed condition comprises a non-motoring mode.